

REMARKS

Initially, Applicant would like to express appreciation to the Examiner for the detailed Official Action provided, for the acknowledgment of Applicant's Claim for Priority and receipt of the certified copy of the priority document, and for the acknowledgment of Applicant's Information Disclosure Statement by return of the Form PTO-1449. Applicant notes that the Examiner has not indicated that the drawings have been approved by the Official Draftsperson on a Form PTO-948. The Examiner is thus requested to indicate that Applicant's drawings are acceptable in the next Official Action.

Applicant acknowledges with appreciation the Examiner's indication of allowable subject matter in claims 1-3, 5, and 7.

Upon entry of the above amendment, claims 4, 9, and 10 will have been amended, and newly presented claims 11 and 12 will have been added. Accordingly, claims 1-12 are currently pending. Applicant respectfully requests reconsideration of the outstanding objection and rejection and allowance of claims 1-12 in the present application. Such action is respectfully requested and is now believed to be appropriate and proper.

The Examiner has objected to claim 10 for minor informalities. In response, Applicant has amended claim 10 as suggested by the Examiner. Accordingly, in view of the above noted amendments and remarks, it is believed that the objection to claim 10 has been

overcome, and Applicant respectfully requests reconsideration and withdrawal of the outstanding objection.

The Examiner has rejected claims 4, 6, and 8-10 under 35 U.S.C. § 103(a) as being unpatentable over AOYAMA et al. (U.S. Patent No. 5,636,613) in view of ASAKURA (U.S. Patent No. 6,742,483). The Examiner takes the position that the AOYAMA et al. patent discloses a variable operating valve apparatus including a camshaft 68, a fuel injector 87 attached at a sidewall 24, 31, an intake port, and a concavity 89 in the intake sidewall that permits the fuel injector to be installed in the intake sidewall, but fails to disclose a cam with a profile that varies along the length of the cam, a rocker shaft having a changing axial position, and valve lift volume setting mechanism to alter the lift of the valve in response to axial movement of the rocker shaft. The Examiner contends that it would have been obvious to use the cam and valve lift volume mechanism with a rocker shaft as taught by ASAKURA in the AOYAMA et al. device to provide an improved variable engine valve device.

Although Applicant does not necessarily agree with the Examiner's rejection of claims 4, 6, and 8-10 on this ground, nevertheless, Applicant has amended independent claims 4 and 9 to clearly obviate the above noted ground of rejection in order to expedite prosecution of the present application. In this regard, Applicant notes that AOYAMA et al. and ASAKURA fail to teach or suggest the subject matter claimed in amended claims 4 and 9. In particular, claim 4, as amended, sets forth a variable operating valve apparatus including, inter alia, a

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fuel injector attached at an intake sidewall “wherein said intake sidewall comprises a concavity adjacent said fuel injector, said concavity formed as an inwardly curved depression in said intake sidewall and being configured to permit said fuel injector to be installed at said intake sidewall”. Claim 9, as amended, sets forth a variable operating valve apparatus including, inter alia, a fuel injector attached at an intake sidewall “wherein said intake sidewall comprises a concavity adjacent said fuel injector, said concavity formed as an inwardly curved depression in said intake sidewall and being configured to permit said fuel injector to be installed at said intake sidewall”.

This amendment is fully supported by the specification, including the claims and drawings, and no prohibited new matter has been added. In particular, Applicant’s variable operating valve apparatus includes a fuel injector attached at an intake sidewall. The intake sidewall includes a concavity that is formed as an inwardly curved depression that is configured to permit the fuel injector to be installed at the intake sidewall. See at least Applicant’s specification, paragraphs [0044], [0045], and [0047] - [0052], and figure 4. Additionally, in Applicant’s claimed invention, the fuel injector is located in close proximity to the combustion chamber, an increase in width of the cylinder head is not required, and a simplified mechanism is provided.

The AOYAMA et al. patent discloses a valve mechanism including a recessed area 89 in the cylinder head. See particularly figure 1. However, AOYAMA et al. fails to teach

or suggest a “concavity formed as an inwardly curved depression in said intake sidewall and being configured to permit said fuel injector to be installed at said intake sidewall”, as set forth in amended claims 4 and 9. Moreover, the AOYAMA et al. patent discloses a valve mechanism, and fails to teach or suggest a variable operating valve apparatus. Additionally, the AOYAMA et al. device does not include rocker arms. In the AOYAMA et al. device, the cams operate the valves directly.

Further, the ASAKURA patent fails to teach or suggest a variable operating valve apparatus including a fuel injector attached at a sidewall including a “concavity formed as an inwardly curved depression in said intake sidewall and being configured to permit said fuel injector to be installed at said intake sidewall”, as set forth in amended claims 4 and 9. Therefore, the ASAKURA patent fails to cure the deficiencies of the AOYAMA et al. device, and even assuming, arguendo, that the teachings of AOYAMA et al. and ASAKURA have been properly combined, Applicant’s claimed variable operating valve apparatus would not have resulted from the combined teachings thereof.

Further, there is nothing in the cited prior art that would lead one of ordinary skill in the art to make the modification suggested by the Examiner in the rejection of claims 4, 6, and 8-10 under 35 U.S.C. § 103(a) over AOYAMA et al. in view of ASAKURA. Thus, the only reason to combine the teachings of AOYAMA et al. and ASAKURA results from a review of Applicant’s disclosure and the application of impermissible hindsight.

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Accordingly, the rejection of claims 4, 6, and 8-10 under 35 U.S.C. § 103(a) over AOYAMA et al. in view of ASAKURA is improper for all the above reasons and withdrawal thereof is respectfully requested.

Applicant submits that dependent claims 6, 8, and 10, which are at least patentable due to their dependency from claims 4 and 9 for the reasons noted above, recite additional features of the invention and are also separately patentable over the prior art of record based on the additionally recited features.

Applicant submits that none of the references of record, considered alone or in any proper combination thereof, anticipate or render obvious Applicant's invention as recited in newly submitted claims 11 and 12. Further, claims 5 and 7, which the Examiner has indicated contain allowable subject matter, have been rewritten in independent form as claims 11 and 12, respectively.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection, and an early indication of the allowance of claims 1-12.

SUMMARY AND CONCLUSION

In view of the foregoing, it is submitted that the present amendment is proper and that none of the references of record, considered alone or in any proper combination thereof, anticipate or render obvious Applicant's invention as recited in claims 1-12. The applied

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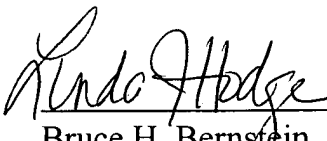
references of record have been discussed and distinguished, while significant claimed features of the present invention have been pointed out.

Accordingly, consideration of the present amendment, reconsideration of the outstanding Official Action, and allowance of the present amendment and all of the claims therein are respectfully requested and now believed to be appropriate.

Applicant has made a sincere effort to place the present application in condition for allowance and believes that he has now done so.

Should there be any questions, the Examiner is invited to contact the undersigned at the below listed number.

Respectfully submitted,
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